## REMARKS

This response is being made to the final Office Action mailed May 8, 2006, which has been carefully considered. Claims 1-11 are pending. In the office action, claims 1-9 and 11 have been finally rejected and claim 10 has been objected to because it is in dependent form based on a rejected claim. No claims have been amended or canceled with the filing of this response. Reconsideration of the above-referenced rejection of claims 1-9 and 11 and the objection to claim 10 is hereby requested in view of the following remarks.

The Examiner has finally rejected claims 1, 2, and 5-9 under 35 U.S.C. § 103(a) as un-patentable over U.S. Patent No. 5,623,598 issued to Voigt et al. ("Voigt") in view of U.S. Patent No. 6,128,717 issued to Harrison et al. ("Harrison"), and further in view of U.S. Patent No. 6,026,352 issued to Burns et al. ("Burns"). Applicants respectfully argues that these references, together or in isolation, do not teach these claims, there is no motivation to combine these references, and Burns is in a different field of art and any combination would only be possible with the benefit of hindsight

Examiner has rejected claim 3 and claim 4 under 35 U.S.C. §103(a) as being un-patentable over Voigt in view of Harrison and Burns and further in view of U.S. Patent No. 5,586,059 issued to Okhelski et al. ("Okhelski"). In addition to the aforementioned arguments, applicants also argues that Okhelski does not teach claim 3 and that Okhelski is in a different field of art and any combination would only be possible with the benefit of hindsight

Examiner has objected to claim 10 based on its dependence on a rejected independent claim. Petitioner urges examiner to remove this objection as the arguments, herein, put the claim it is dependent on in condition for allowance.

These final rejections are hereby traversed and allowance of the claims is requested in view of the following arguments.

Three basic criteria for establishing a prima facie case of obviousness under 35 U.S.C. § 103 are set out at MPEP 2143. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.

As set out by MPEP 2143, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. There must also be a reasonable expectation that this modification will succeed. The teaching or suggestion to make the modification and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) cited at MPEP 2143.

Per the MPEP 2143.01, "[t]here are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet,* 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.)." Further MPEP states 2143.01 states that "[t]he level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999)." Outside the current application, there is no suggestion to combine the mentioned references.

Applicants' invention, in general, is used to measure the output performance trends of a mass storage system. It allows the user to configure a series of synchronized time coordinated commands to be executed by a plurality of computers connected to a plurality of devices, start execution of these commands while recording user definable metrics to measure performance of the system. The invention then allows the user to view those metrics through a display means, printed, or other means.

**Grounds for reconsideration of Claim 1**

Claim 1 is the only independent claim and all other dependent claim's rejections are based on claim 1; removal of the grounds of rejection for claim 1 would put all other claims and this application in condition for allowance. The two grounds for overcoming this rejection are that there is a lack of teaching in the combined references and a lack of motivation to combine the references.

Claim 1 states:

> A method for presenting system performance to a user in a mass storage system, the storage system having a plurality of disk drive storage elements connected by a disk drive controller, said controller receiving commands and data from and returning at least data to a plurality of host computers, said method comprising
>
> > Executing at a plurality of said host computers a test request by sending commands to said mass storage system in a coordinated time synchronized fashion,

Accumulating, at said executing host computer, data regarding performance of said mass storage system, in response to the requests sent by said host computers, and

Presenting said accumulated data, in a graphical plot format, for enabling the visualization of trends in the performance of said mass storage system as a function of at least one selected parameter, in response to said host generated commands.

This claim was rejected based on Voigt in view of Harrison, in further view of Burns. Examiner states that Voigt teaches a method for presenting a system performance to a user in a mass storage system and applicants respectfully disagree. Voigt does not refer to a "mass storage system," rather a data storage system. When examining Voigt's data storage system, it is found to be materially different than the current disclosure and does not suggest the mass storage system of the present invention. A "mass storage system" in the current disclosure consists of a plurality of disk drive elements controlled by a plurality of host computers. The Voigt reference only describes a single computer with a disk array. This means that Voigt's system does not disclose a "plurality of host computers," only a single computer and plurality of devices, and therefore Voigt's data storage system is not a "mass storage system." This distinction is important as "mass storage system[s]" are more complex and require different management techniques than a single computer.

As Voigt teaches only one computer, it can not and does not teach "executing at a plurality of said host computers" or "receiving commands and data from and returning data to a

plurality of host computers." To receive "commands and data from a and returning at least data to a plurality of said host computers," there must be a plurality of computers to send the commands to and a plurality of computers to receive the data from the controller. As Voigt does not have a plurality of computers, it can not and does not disclose or teach sending commands from them to a controller. Further, if there is only one computer, as in Voigt, there can not be an "accumulation, at said executing host computer, data regarding performance of said mass storage system, in response to the requests sent by said host computers." These requests must be sent by a "plurality of host computers," if there is only one computer, requests can not be received from a "host computers." (Reference Figure 1 of application).

Applicants agrees with examiner that Voigt does not teach a controller connected to a "plurality of host computers," "receiving commands and data from and returning at least data to a plurality of host computers," or time coordination. Applicants respectfully argue that incorporation of Harrison does not overcome Voigt's shortcomings. Reading the examiner's cite in the Harrison reference, it is noted that Harrison only discloses a mass storage device connected to an external host computer or networked environment via an interface structure. Harrison does not suggest or disclose connection to a "plurality of host computers"; rather it only discloses connection to a storage device directly or over a network. Further, connection to a network does not teach nor disclose connection to a "plurality of host computers" or any other computer. This argument is strengthened when observing that Harrison repeatedly mentions a single host computer not a plurality of host computers. Since Harrison repeatedly mentions only a single host, it can not and does not teach a "plurality of host computers."

Further, Harrison also does not overcome Voigt's shortcomings for the following portion of claim 1 "controller receiving commands and data from and returning at least data to a plurality of host computers." In order to receive commands from a "plurality of host computers," there must be more than one computer. Harrison only discloses one computer and one computer can not receive commands from a plurality of computers. Further, consider the following language of claim 1: "Accumulating, at said executing host computer, data regarding performance of said mass storage system, in response to the requests sent by said host computers." If there is only one computer, there can be no "accumulation" of data send by "host computers." Lack of said "accumulation" would frustrate part of the current invention for without "accumulation," there can be no coordination of commands in a "coordinated time synchronized fashion." For coordination of commands, multiple commands, from a "plurality of host computers" must be considered in order to coordinate response to those commands in a "time synchronized fashion." Therefore Harrison does not nor can not teach a "controller receiving commands and data from and returning at least data to a plurality of host computers," nor "accumulation," nor a "coordinated time synchronized fashion."

In addition, in the Harrison reference the computer is connected to the network and any devices through a single network connection. Yet, in the current disclosure in Figure 1, the controller is directly connected to a "plurality of host computers" through a plurality of connections. This is unlike Harrison that only has one connection to the network or outside devices through one connection. Therefore, Harrison does not teach connection to a "plurality of host computers" as described in Figure 1.

As a result, if there is not a "plurality of host computers," then there are no "commands" sent from a "plurality of host computers" to a "controller." If no "commands" are sent, there can be no "receiving of commands and data." Without this, there is no way to send commands in a "coordinated time synchronized fashion" which then allows data to "accumulate at executing host computer." The current invention discloses "plurality of said host computers a test request by sending commands to said mass storage system in a coordinated time synchronized fashion." This coordination of commands is necessary to fully test the data environment

This "coordinated time synchronized fashion" is important to create sequences of commands between the "host computers" and the "controller" that could illuminate shortcomings in the "mass storage system." Neither the storage capabilities, the computers acting in unison or in sequence, nor the throughput of the communications could be tested in such an environment. . As neither Voigt nor Harrison discloses a plurality of computers, neither Voigt nor Harrison can or do teach a plurality of computers or an accumulation.

With multiple computers and multiple commands, it can be beneficial in a test to send these commands in a coordinated time synchronized fashion (Page 9 lines 1-15). This is not something that would be necessary in the Harrison or Voigt references. In Harrison and Voigt there does not need to be synchronization of instructions between computers as there is only one computer. Therefore, Harrison nor Voigt, together or in isolation, do not disclose a mass storage system, do not disclose a plurality of computers, do not disclose receiving data from a plurality of computers, do not disclose sending data to a plurality of computers, and do not disclose coordination.

Applicants agree with the examiner that neither Harrison nor Voigt teaches coordinated time synchronization. However, applicants respectfully reject examiner's assertion that Burns teaches "sending commands in a time synchronized fashion." Examining Burns, this would be a too broad a reading of this claim. Burns teaches a method of synchronizing internal clocks of field devices. This method is to allow each field device's internal clock to be synched to every other field device's clock. This method requires communication to be sent in only one direction, from the master clock to each device's internal clock. It does not require communication from each field device back to the master clock. Therefore, Burns' time stamp information transfer is unidirectional.

Further, the direction of the messages sent, from the master clock to the distributed clocks, is in the wrong direction to enable accumulation in Claim 1. Claim 1 states "Accumulating, at said executing host computer." There can be no accumulation at the host computer if messages can only be sent in the other direction, from the master clock to the distributed clocks. Therefore, the Burns patent does not teach or suggest coordinated time synchronization as is taught in the current application.

Applicant's invention teaches a method of transmitting synchronized commands to a plurality of host computers. This method is different than internal clock synchronization and requires a different method of synchronization than is taught in Burns. Specifically, it requires bi-direction communication between each drive storage element and the disk controller, not Burns' unidirectional communication. Synchronization of commands requires feedback between the components of the distributed system while synchronization of internal clocks needs no such

feedback. Burns' method would not be able to accommodate this sequential requirement; it would only allow two devices to have the same internal clock setting.

Also, as stated in the claim, to enable coordination of the commands, there must be an "accumulation" of these commands. Neither command coordination, bidirectional communication, nor "accumulation" are taught in Burns' clock synchronization. Command coordination and synchronization is a different and non-obvious answer to the problem of enabling devises to act in unison, sequentially, or any number of combinations thereof.

Further, there is also no motivation to combine the Harrison, Voigt, and Burns references and any motivation to combine these references would be only by virtue of hindsight. Applicants will first address why there is no motivation to combine Harrison and Voigt. Applicants will then address why Burns, of a different art type, would also not be combined with Harrison or with Voigt.

Harrison and Voigt would not be combined because these teaching have different functions. Voigt teaches recording and displaying performance data of a system, something that would frustrate Harrison's performance optimization algorithm. Harrison is directed at solving a problem by presenting a more efficient method that does not include extra steps, such as the steps in Voigt's system. Voigt's system adds recording performance data and displaying this data to the user. Voigt does this to diagnose a problem and present possible solutions. As Harrison has already created a solution, increasing hard drive efficiency, it would not need a method such as Voigt to diagnose the problem. Further, Harrison is directed at an internal optimization. By definition, this means that the Harrison system is not to be viewed external to the system. Therefore, any external visualization means, graphical displays, or printed means is

outside and against the teachings of Harrison's internal system. As Harrison is directed at increasing the efficiency of a hard drive it teaches away from adding extra unnecessary steps. Measuring the performance of data performance system would add extra steps and there is no motivation to combine this reference to Voigt and any motivation to combine these references would be only by virtue of hindsight

There also is no motivation to combine the Harrison reference with the Burns reference as Burns is in a different field of art. The Harrison reference teaches a system of enhancing a hard drive type of storage device and is concerned with a personal computer. The Burns reference is directed to the field of process control networks. No one, without the benefit of hindsight given by the current invention would think to combine these two totally different fields of art. A personal computer is aimed at increasing productivity, storing information, and entertainment. Conversely, a process control network is used to control transfer of oil in pipelines or ensure that a nuclear power plant does not overheat by managing the water cooling systems and fuel consumption for the fission process. One does not think to take an algorithm developed for a personal computer, often no bigger than a breadbox, and combine it with a system that could be as large the size of a small country, in the case of several of the oil and gas lines in the United States. As a result, there is no motivation to combine Burns and Harrison.

Moreover, there is no motivation to combine Voigt with Burns as Burns is in a different field of art than the Voigt. Burns teaches to the field of process controls networks. Voigt teaches to the field of data storage. The function of controlling the feedback in a nuclear power plant is quite different than the function of storing health records in a database or streaming video from a database to a network device. As these functions are so different, there is a lack of

motivation to combine these references and any motivation to combine these references would be only by virtue of hindsight. Therefore, applicants respectfully request removal of the rejection of this and subsequent claims based on the preceding arguments.

**Claims 2, 5-11**

Furthermore, with respect to dependent claims and 2, 5-9 and 11, Applicants respectfully submit since these claims depend from claim 1 they are allowable for the same reasons as for claim 1.

**Claim 10**

Applicants also requests removal of the objection to claim 10 as the independent claim on which it is based is not in condition of allowance based on the aforementioned arguments.

**Claim 3 and 4**

Claims 3 and 4 state:

> 3. The method of claim 1 further wherein said accumulating step accumulates said data in a plurality of databases, and said method further comprises selecting on of said databases for viewing.
>
> 4. The method of claim 1 wherein said presenting step prints said data in said graphical plot format.

Applicants agree with examiner that neither Voigt, Harrison, nor Burns teach a method "wherein said accumulating step accumulates said data in a plurality of databases, and said method further comprises selecting on of said databases for viewing." However, applicants argue first that Oshelski does not teach "wherein said accumulating step accumulates said data in

a plurality of databases" and second that that there is no motivation to combine the previous references with Oshelski as it is in a different field of art and any motivation to combine these references would be only by virtue of hindsight.

Examiner's reference of Oshelski, column5 lines 44-77 talks of extracting data from existing files. Then, the data is removed from these files and only then transferred to databases. This is different than "accumulating said data in a plurality of databases." In Oshelsk, data is first accumulated not in a database but in a text file. Second, this data is extracted from the files but only after all data generation has occurred. If the data is extracted after finishing the operations and before any contact with a database, there can not be "accumulating said data in a plurality of databases." The final step in Oshelski is to copy, not accumulate, the extracted data to databases. This process is not the same and is, by the sheer number of steps, more complicated and less efficient than the process outlined in the current invention. Therefore, Oshelski does not teach the steps of claim 3.

Further there is no motivation to combine Oshelski with any of the other references as it is a different field of art. Oshelski is a system to enable the analysis and control of photolithography steppers in a submicron fabrication facility. This invention is directed at recording a physical process and then analyzing the performance of that physical process by examining the data. This is a different function in a different field of than all of the other references. First, Voigt pertains to data storage environments not sub micron fabrication. Second, Burns teaches to process control networks are not in the same field of art. Third, Harrison teaches to personal computer components. None of these art types or functions are the same or even close to that of sub-micron fabrication of photolithography steppers. The

combination of these different art types, without teaching or motivation to combine the references, is available only in hindsight and otherwise would not occur. Oshelski nor the other references not suggest or teach such a combination. Therefore, as there is no motivation to combine these references, removal of this rejection and allowance of claims 3 and 4 is requested.

**Conclusion**

Based on the aforementioned arguments, applicants respectfully suggest the rejection of Claims 1-9 and 11 under 35 USC § 103 is unwarranted, and removal of this rejection is hereby respectfully requested. Applicants also requests removal of the objection to Claim 10 as it depends from a claim which applicants have shown to be allowable and thus also should now be in condition for allowance.

The remaining references cited by the Examiner have been reviewed, but are not considered to adversely affect patentability of the claims.

In view of the foregoing, the applicants' believe that the application is in condition for allowance and respectfully request favorable reconsideration. In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is invited to call the undersigned attorney at (508) 293-7998.

Please charge all fees occasioned by this submission to Deposit Account No. 05-0889.

Respectfully submitted,

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